China's Lunar Sample Sharing Boosts Collaboration

Voice of the World

By GONG Qian

On April 24, observed as Space Day in China, the Chinese authorities announced that seven institutions from six countries, including two NASA-funded U.S. universities, would be given access to samples from the moon collected by the Chang'e-5 mission.

This is being widely praised by the science community, who say that China's sharing of its lunar samples not only reflects its openness on space exploration but also highlights the importance and value of global collaboration in scientific research.

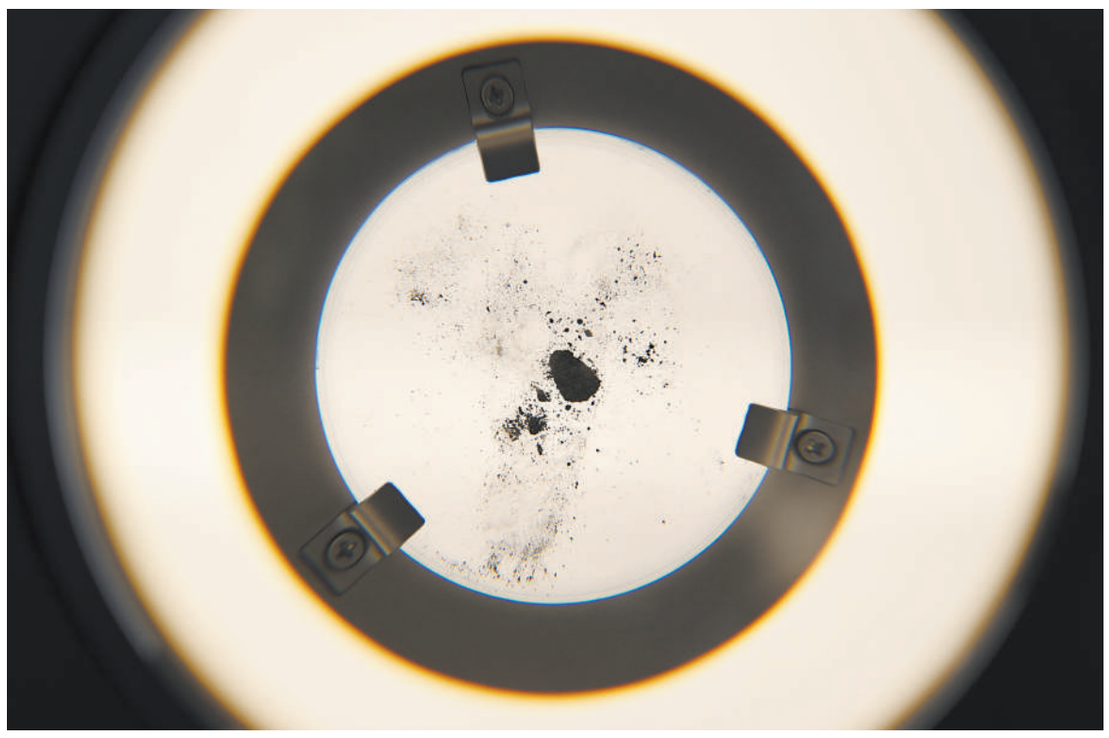
With its open competitive process for providing access to the samples, "China is setting a very positive example for scientific cooperation," Frédéric Moynier, a cosmochemist at the Paris Institute of Planetary Physics, who was given a portion of the lunar samples, told *Science* magazine.

The decision demonstrates China's commitment to international cooperation in space once again. China's lunar missions have already carried international payloads to conduct scientific research. For example, the Chang'e-6 robotic probe carried four such payloads in 2024. They included a Pakistani CubeSat satellite that was successfully sent into the lunar orbit, capturing images of the moon and sun and collecting magnetic field data.

The Chang'e-7 mission, scheduled for launch next year, will have six international payloads, while the Chang'e-8 mission, slated for 2028, will include 10 scientific payloads and offer 200 kg of payload capacity for interested countries.

The pragmatic actions reflect China's increasingly proactive and open approach to international space exchange and cooperation. As *Science* magazine commented, "Sharing the samples takes China's embrace of international cooperation in space science to a new level."

How has China been able to share opportunities with the international community? "This is because of the increase in our nation's overall strength and consequent rise in self-confidence," Wu Weiren, chief designer of China's lunar exploration program, told Reuters.



This photo taken on April 13, 2025 shows the lunar soil sample collected by China's Chang'e-5 mission displayed in the China Pavilion at the Osaka Expo in Osaka, Japan. (PHOTO: XINHUA)

On the other hand, sharing the lunar samples will enhance the understanding of the moon's formation and evolution, while forging stronger international scientific partnerships by bringing together diverse perspectives and technologies.

It is great to see this important milestone in the scientific cooperation between Europe and China, said Dr James Carpenter, head of the European Space Agency's Lunar Science Office. The Chang'e-5 lunar samples provide a unique window into the history of the solar system, Carpenter added. Chinese researchers, collaborating with foreign researchers, have already analyzed the moon samples collected by Chang'e-5 and produced groundbreaking findings.

Now with increased international collaboration, it is expected that the future discoveries will help fill the gaps in human understanding of the moon's geology.

For example, Professor Mahesh Anand and his team at the Open University in the UK plan to evaluate the giant-impact origin of the moon. Timothy Glotch, a planetary scientist at Stony Brook University in the U.S., will focus on collecting infrared spectra and studying space weathering. Undoubtedly, their research will unveil more mysteries of the moon.

In this context, it is worth noting that due to the *Wolf Amendment*, which prevents U.S. government funds from being used in direct and bilateral cooperation with the Chinese government, Professor Glotch and his team will be doing their research using non-NASA funding, with his institution providing the necessary financial support.

China remains committed to an open space diplomacy policy. The lunar samples are a shared treasure for all humanity. China expects them to help scientists around the world make more pathbreaking discoveries, expand human knowledge, and benefit entire humanity.

Opinion

AI + Robotics Reshaping Modern Security

By LI Linxu

With the rapid development of AI and robotics, the security industry is undergoing a transformative revolution.

Under the theme of "Sharing AI Development Opportunities, Building a Broad Future for Security Services," a recent symposium in Beijing brought together representatives from related government departments, research institutions, technology firms, investment companies and security enterprises.

"As an important player in China's security sector, we are actively embracing AI transformation and prioritizing innovation, talent cultivation and application-driven models to build an AI industrial cluster for security services," Chen Jiang, secretary of the Party Committee and chairman of Capital Industrial Investment Co., Ltd., stated.

He called for deepening collaboration with research institutions and tech enterprises to foster a data-driven, cross-industry ecosystem marked by human-machine collaboration and shared innovation.

Through integrating multi-modal sensors and AI algorithms, security robots can handle basic security tasks. They are being applied in a wide range of scenarios, such as conducting hazardous material detection and emergency responses, said Zhu Zexi, a researcher from the Equipment Industry Development Center of the Ministry of Industry and Information Technology. In the future, such robots will have great potential in comprehensive autonomous patrol and dynamic task planning, intelligent emergency response and collaborative rescue operations.

Driven by increasing demand, technological advancements and smart city initiatives, China's security robotics market is expected to develop at a compound annual growth rate of 10.05 percent from 2025 to 2032, according to Market Research Intellect.

Chen Xi, CEO of Mortise Labs, proposed establishing robot pilot testing bases nationwide, so as to facilitate the integration of robots into daily life and urban management. Leveraging its online platform, Mortise Labs also aims to build a comprehensive robot digital community that integrates technology sharing, enterprise services and commercial applications.

Yang Lei, executive vice president of Tsingzhan Artificial Intelligence Research Institute, thinks that video analytics in the security industry represents a blue ocean market. By leveraging cross-modal cognitive and reasoning capabilities, video analytics has evolved from merely capturing visual details to comprehending event semantics, achieving unprecedented automation that replaces labor-intensive monitoring with intelligent contextual understanding.

The integration of robots and AI not only enhances efficiency but also pioneers a new paradigm for the security industry. As traditional human-reliant models are being phased out globally, China's unique combination of cutting-edge tech ecosystems and smart city initiatives has positioned it to deploy intelligent security solutions at an unprecedented scale.

Targeted Financial Policies Bolster Growth Momentum

Comment

By LI Linxu

China has recently introduced a comprehensive package of financial measures aimed at reinforcing economic stability and fostering sustained growth.

These policies, characterized by precision and intensity, reflect a strategic response to both domestic growth imperatives and external uncertainties, injecting renewed confidence into markets and households alike.

The People's Bank of China (PBOC), the country's central bank, announced a 50-basis-point reduction in the reserve requirement ratio, releasing approximately one trillion RMB in long-term liquidity.

Concurrently, key interest rates, including the seven-day reverse repo rate, structural monetary policy tool rates, and personal housing provident fund loan rates, were lowered by 10 – 25 basis points.

These moves aim to reduce financing costs for businesses and households, particularly benefiting the real estate sector through cuts in mortgage rates. The mortgage rate cuts are expected to save homebuyers' interest payments by more than 20 billion RMB per year, according to PBOC governor Pan Gongsheng.

It exemplifies a nimble and multi-pronged approach to economic governance. By coupling macro-control efforts with precision-targeted measures, the authorities are not only addressing immediate challenges but also laying the groundwork for sustainable growth.

PBOC announced more financial support through relending for sectors including sci-tech innovation, service consumption and elderly care.

It will add the quota of relending for technological innovation and upgrading by 300 billion RMB, establish a 500 billion RMB relending facility to support service consumption and elderly care, and add 300 billion RMB in relending quota to support agriculture and small businesses.

Additionally, PBOC, together with relevant departments, rolled out a series of measures to bolster the capital market, including relaxed rules for mergers and acquisitions and enhanced support for tech companies.

Regulatory bodies are fast-tracking the development of a "sci-tech board" in its bond market to promote the issuance of sci-tech innovation bonds by financial institutions, tech firms and private equity investment institutions. According to preliminary figures from the PBOC, nearly 100 market entities are preparing to issue more than 300 billion RMB worth of sci-tech innovation bonds, with further participation expected in the future.

Newly announced measures also address external headwinds by enhancing finance support and offering tailored assistance to affected enterprises.

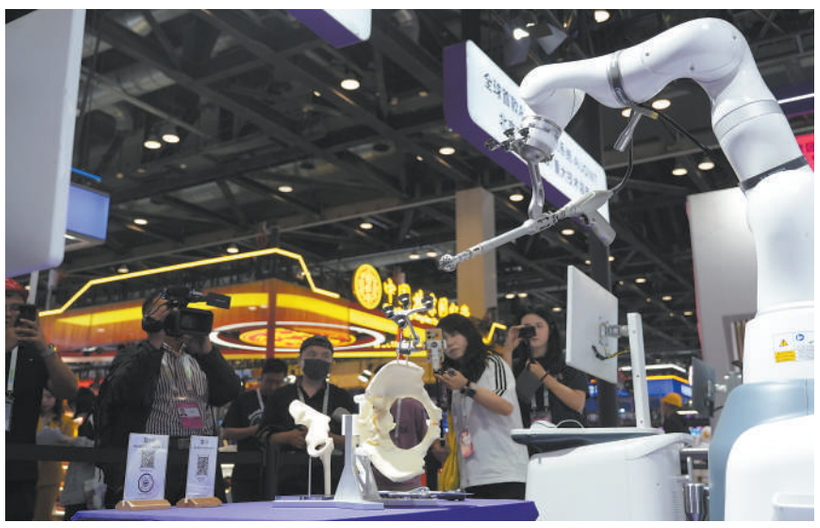
As global uncertainties persist, these initiatives underscore China's resolve to advance its structural transformation agenda, while fostering a robust ecosystem for innovation-driven growth.

An engineer calibrates nursing robots in a high-tech company in Shandong. (PHOTO: XINHUA)

Hi-Tech

Smart Products Shine at CHITEC

The 27th China Beijing International High-Tech Expo (CHITEC) was held from May 8 to 11, 2025 at the China National Convention Center in Beijing. Let's take a look at some advanced hi-tech products.



The ROPA orthopedic smart surgical robot can be used in joint replacement and spinal surgeries with its AI system.

The smart bionic hand developed by BrainCo employs non-invasive brain-computer interface technology to aid patients. (PHOTO: HONG Xing / Science and Technology Daily)

Digitalizing Ancient Chinese Books with AI

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AI learned the characters, styles of strokes and texture of pages of the original ancient book, and restored the missing characters based on the original font, color and background, striving to make the restored sections as close as possible to the original ancient book.

The accuracy of the platform's AI automatic punctuation surpassed 90 percent based on tests, and the translation of ancient texts also reached the level of experts, according to Yang Hao, deputy director of the Research Center for Digital Humanities of PKU.

Wang Yu, who is responsible for the ancient book project products at the corporate social responsibility department of Douyin Group, ByteDance, said that they simplified recognition work by having a one click process for a user to reach the original text for manual comparison and calibration.

They are also upgrading algorithms for recognizing handwriting characters, variant characters, complicated formats and illustrations, aiming to continuously enhance the accuracy of recognition, Wang added.

Experts for sorting ancient books needed

There are only around 10,000 people working on sorting ancient books in China currently, according to Wu Guowu, deputy secretary general of the ancient book sorting and research committee of Chinese universities.

This is far from enough, compared with the huge amount of ancient books. It is estimated that there are over 200,000 categories, 500,000 extant versions, and more than 3.2 million volumes of ancient Chinese books.

AI's involvement in sorting ancient books also makes the cultivation of relevant experts innovative. Wu said that most classical philology majors in universities have opened interdisciplinary courses regarding digital humanities, and seven universities have applied for the establishment of a bachelor's degree in digital humanities, where ancient book sorting is a crucial component.

Liu once worried that he might lose his job, as AI has a speed that humans cannot compete with. But he has since changed his mind. AI recognition of ancient books is based on the high-quality data organized by humans, Liu said, adding that humans are still needed to explore the mysteries of ancient books and pass down cultural heritage, no matter how technology is going to evolve.